USER MANUAL

# AGRÓNIC 2500

Plus Version ✪ | V3

**Sections in the manual:**

- – Use guide
- – Technical specifications
- – Programs
- – Manual
- – Readings
- – Consultation
- – Diesel option
- – Troubleshooting
- – Technical support

*The Communications Query section is detailed in the Communications Manual.*

*The parameters and input and output coding sections are detailed in the Installer's Manual.*

FINAL USER · USER MANUAL

SISTEMES ELECTRÒNICS
**PROGRÉS**
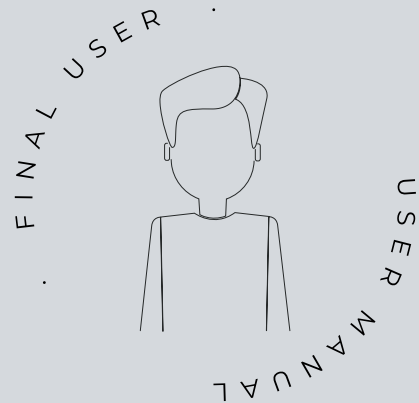
Welcome to the world of Agrónic 2500.

This document will be your guide as you become familiar with complete mastery of this powerful controller.
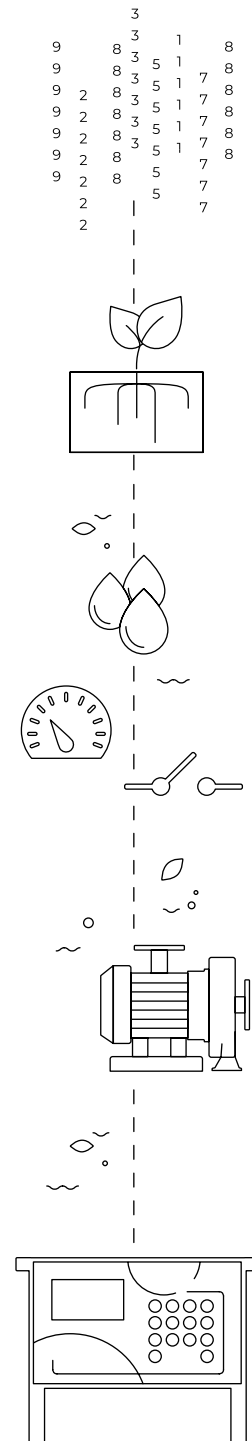
## The manual is aimed at end users like you.

There is an extensive guide that details all the features and functionalities.

Even if you're a beginner in this field, the essential information is provided so that you can use the controller effectively. Our goal is to ensure that you feel safe and prepared.

It is important to note that there are two versions available: the Basic edition and the Plus edition, each of which is adapted to its specific specifications and options.

Let's start this journey!

# Index

# 1 USE GUIDE

This section details basic concepts about the controller, useful for new users who are not familiar with the Agrónic 2500.

## 1.1. GENERAL CONCEPTS

Names such as Programs, Sectors, Records, etc. appear in Agrónic that may not be familiar to the user. Here is a short explanation of each of these concepts. The features in the explanations are not the only ones that the Agrónic offers, see the installer's manual for the complete features.

Pump: it can be a water delivery pump or a general valve for the farm.



Sector: corresponds to an irrigation valve that opens water to a part of the farm, for example, a branch of drip emitters. Each sector can be assigned a pump so that when the sector is activated the pump is also activated.
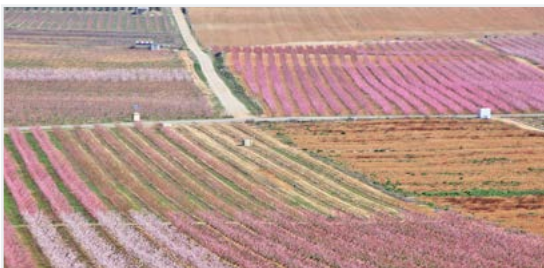


Fertilizer: any liquid supplied to the plant along with the irrigation water. Fertilizer can be supplied during the entire irrigation time or only during part of it.



Program: these are automatic irrigation commands in which sectors and fertilizers are combined with a start day and time and an irrigation and fertilizer time.



Manual: any action that is required immediately. For example, activate or stop a program, deactivate an alarm, make an emergency stop, etc.

**Sensor**: a mechanical or electronic unit that measures magnitudes, statuses or quantities. They can be of three types: analog for magnitudes (for example, pressure, temperature, soil humidity, etc.), digital for statuses (for example, valve open or closed, tank full, etc.) and meters for quantities (for example, meter irrigation, rain gage, etc.). The sensors are connected to the Agrónic through the analog and digital inputs.



**Determining factor**: controls that act on the irrigation programs based on the sensor values. For example, stopping irrigation when it is windy, starting irrigation if the soil humidity is very low, modifying the amount of irrigation based on total radiation, etc.



**Record**: agrónic makes a record, with date and time, of everything it does. For example, activate and stop programs, alarms and malfunctions, communication failures, etc.



**Anomaly**: from the record made by Agrónic, there are some things that are considered possible problems for irrigation. These are recorded as anomalies and the number is shown in the general query.

## 1.2. FIRST STEPS WITH AGRÓNIC

The first screen that appears in Agrónic when it starts up is General Consultation. The following menus are available from this screen:
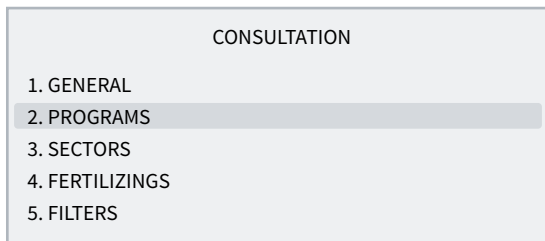
### Menu Function

Use the 'Function' key to access the menu where the irrigation programs can be modified, perform manual actions, read history and anomalies or change the operating parameters.

```
                    FUNCTION

  1. PROGRAMS
  2. MANUAL
  3. READINGS
  4. PARAMETERS
  5. PIVOTS
```
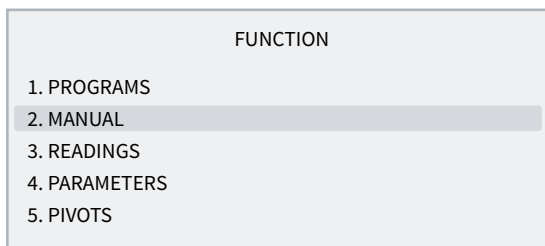
### Consult menu

Use the 'Consult' key to access which shows what the controller is doing (program, communication, etc. status) and the unit's specifications (serial number, version, etc.). Values cannot be modified on these screens.

```
                  CONSULTATION

  1. GENERAL
  2. PROGRAMS
  3. SECTORS
  4. FERTILIZINGS
  5. FILTERS
```

Press the 'Function' or 'Consult' key to return to the main menu.

The up and down arrows move the menu selection. It can also be done by pressing the selection number. When the desired option lights up, press the 'Enter' key. An arrow on the side of the screen indicates that there are more options.

Modifying values: when a value is modified, it appears highlighted on the screen (black background and white text). If it is a numerical value, enter it using the number keys. If it is text, see the following section. To validate and jump to the next value, press the 'Enter' key. You can also validate using the up or down arrow keys, but instead of jumping to the next value, it jumps to the next screen.

An example of how to interpret the questions and how to modify the possible values to configure is explained:

---

🎖 **Example**

```
            Example of interpretation

  N. of fertilizers: 0
  Fertilizer general: no
  Type of fert.:  series
```

**N. of fertilizers** *(0 ... 4)*

- Underlined value or number: indicates the default value that is configured in the controller.

**Fertilizer general** *(yes | no)* 9⁺ 0

- Indicates the option to respond with 'yes' or 'no'.

**Type of fert.** *(series | parallel)* 9⁺ 6⁻

- Indicates that there are several options to modify.

---

Screen off: the screen turns off automatically if no key is pressed for five minutes. To turn it back on, just press a key and return to the General Consultation. If any value is being modified, it is saved and the screen turns off.

## 1.3.  USING THE KEYBOARD

| | |
|---|---|
| **NO** **0** | Number 0 + "NO" for yes/no confirmation questions |
| **DOM** **1** | Number 1 + Sunday, for questions related to the days of the week. |
| **LUN** **2** | Number 2 + Monday, for weekday questions |
| **MAR** **3** | Number 3 + Tuesday, for weekday questions |
| **MIE** **4** | Number 4 + Wednesday, for weekday questions |
| **JUE** **5** | Number 5 + Thursday, for weekday questions |
| **VIE** **6** ⊖ | Number 6 + Friday, for weekday questions + ⊖, for sign and choice questions |
| **SAB** **7** | Number 7 + Saturday, for weekday questions |

| | |
|---|---|
| **Diario** **8** | Number 8 + Daily log, for weekday questions. |
| **SI** **9** ⊕ | Number 9 + "YES", for yes/no confirmation questions + ⊕, for sign and choice questions |
| **ENTER** | Enter key, to accept a menu selection, the last value entered or confirm the selection in a question. |
| **FUN** | Function key, to access the functions menu and also to go backward when inside the menus. |
| **CON** | Consultation key, to access the consultation menu or also to go back in the menus. |
| ▼ | Down arrow key, to move the cursor in the menus, jump to the next screen or the next day in the records. |
| ▲ | Up arrow key, to move the cursor in the menus, jump to the previous screen or to the previous day in the records. |

Entering text: situate the cursor in the space prior to the text; modify it by pressing the ⊕ key; in this section, the keys function in the following manner:

| | |
|---|---|
| ⊕ | Moves the cursor one character to the right |
| ⊖ | Moves the cursor one character to the left |
| ▲ | New character, the previous one, letter B becomes A |
| ▼ | New character, the following one, letter B becomes C |
| **ENTER** | Accepts the text, skips to the next value |

| | |
|---|---|
| **1** | Capital letters |
| **2** | Lower-case letters |
| **3** | Numbers |
| **4** | Symbols |
| **NO** | Erases and moves to the left |

## 1.4. MOST-USED SCREENS

Within the Query menu, the most-used screen is General Consultation, which shows the date and time of the Agrónic, whether there is any anomaly or stop and, if it is irrigating, the sectors that are open.

For further information, see the General query section.

```
                GENERAL CONSULTATION

  Mon   dd/mm/yy hh:mm:ss
  New anomalies: 05
  S: 02 03 05 08
  M1   F - 2 - -   A - 2 - -   L -
```

Within the Function menu, the most-used screens are Programs to modify irrigation and Manual to activate or stop irrigation immediately, in addition to other options.

You can change the irrigation sectors, days of the week, start time, time or volume, etc. It is recommended not to change these values when the program is activated.

```
                    PROGRAM 01

  Sectors: 03  04
  SMTWTFS              Start: 10:30
  Irrigation: 02:40
  F1  01:05            F2  00:12
```

Manual Programs can be used to start or stop irrigation. See section 4 for further information.

```
                  MANUAL PROGRAMS

  Program: 08
  Start: yes
```

# 1.5. PRACTICAL EXAMPLES

## 1.5.1 Irrigation programs

### Change a program's irrigation time.

Press the 'Function' key and go to number '1. Programs'.

```
                FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
```

Select the program to modify and 'Enter'.

```
                PROGRAMS

P01 - . S01  S02
P02 - . S03  S04
P03 - .
P04 - .
P05 - .
```

Press the 'Enter' key until the irrigation time is selected.

Modify and press the 'Enter' key.

```
              PROGRAM 02

Sectors:  03  04
SMTWTFS     Start: 10:00
Irrigation: 02:00
```

Press or 'Function' or 'Consultation' to exit.

If the program is irrigating when it has been modified, the change will not take effect until the next irrigation.

### One program activates when another finishes (sequential program)

Press the 'Function' key and go to number '1. Programs'.

```
                FUNCTION

1. PROGRAMS
2. MANUAL
3. REDMINGS
4. PARAMETERS
```

Select the program to modify and 'Enter' .

```
                PROGRAMS

P01 - . S01  S02
P02 - . S03  S04
P03 - .
P04 - .
P05 - .
```

Press the 'Enter' key until the start time is selected.

```
              PROGRAM 03

Sectors:  05  06
SMTWTFS     Start: 99:02
Irrigation: 02:00
```

Enter 99 in the two hour digits (indicates that it is sequential) and enter the previous program in the two minute digits. To use 99, it must have been previously configured in 'Function - 4. Parameters - 8. Installer - 5. Various'.

In the example above, program 3 would be activated when program 2 finishes.

Press or 'Function' or 'Consultation' to exit.

## Stop a program immediately

Press the 'Function' key and go to number '2. Manual' and 'Enter'.

```
                  FUNCTION

    1. PROGRAMS
    2. MANUAL
    3. READINGS
    4. PARAMETERS
```

Go to number '3. Program' and 'Enter'.

```
                  MANUAL

    1. Out of service
    2. STOP
    3. Program
    4. Filters
    9. Clock
```

Enter the program number to stop and then press 'Yes/9' in Stop. Press 'Enter' to stop the program.

```
              MANUAL PROGRAMS

    Program: 03
    Stop: yes
```

## How to exit a definitive stop

When it shows that the Agrónic is in Final Stop in General Consultation, this indicates that an error occurred during irrigation that caused the irrigation to stop and not allow more to enter. In order to continue irrigation, the Agrónic must be reset by the user.

```
            GENERAL CONSULTATION

    Mon 05/07/10 17:28
    * DEFINITIVE STOP *
```

Press the 'Function' key and go to number '2. Manual' and 'Enter'.

```
                  FUNCTION

    1. PROGRAMS
    2. MANUAL
    3. READINGS
    4. PARAMETERS
```

Go to number '6. Terminate stops' and 'Enter'.

```
                  MANUAL

    2. STOP
    3. Program
    4. Filters
    5. Clock
    6. Terminate stops
```

Within Manual stops there are two questions:

- Stops and malfunctions: enter this to reset the Agrónic, 'Yes/9'.

- Irrigation postponed: to continue with the irrigation that has been stopped, enter 'Yes/9'.

```
                STOP MANUAL

    Finish:
    stops and malfunctions: yes
    Irrigation postponed: no
```

## 1.5.2   How can I see...

### How can I see how long it takes to finish irrigation?

Press the 'Consultation' key and go to number '2. Programs' and 'Enter'.

```
                    CONSULTATION

 1. GENERAL
 2. PROGRAMS
 3. SECTORS
 4. FERTILIZERS
 5. FILTERS
```

Enter the program number to consultation and 'Enter'.

```
                PROGRAM CONSULTATION

 01.       02.       03.       04.       05.
 06.R      07.       08.       09.       10.
 11.       12.       13.       14.       15.
 16.       17.       18.       19.       20.
 Program No.: 06
```

The consultation shows the sectors that are activated and the time or volume left to finish the irrigation.

```
               PROGRAM CONSULTATION 06

 Irrigating
 Sectors: 03  04
 Irrigation: 01:32
```

### How can I see whether a program has irrigated correctly?

Press the 'Function' key and go to number '3. Readings' and 'Enter'.

```
                     FUNCTION

 1. PROGRAMS
 2. MANUAL
 3. READINGS
 4. PARAMETERS
 5. PÍVOTS

                     READINGS

 1. Totals
 2. Anomalies
 3. Record
 4. History
```

Change to the previous and next anomaly using the up and down arrows.

Record number 17 is the one at the beginning of the program. Indicates the start date and time and the reason.

```
                      RECORD

 N17  05/07/10  15:30
 Program 2.
 Start by: schedule
```

Record number 27 is the one at the end of the program. Indicates the date and time of the termination, the reason why it stopped and whether it stopped before completing all irrigation. It indicates the amount (time or volume) remaining without irrigation.

```
                      RECORD

 N27  05/07/10  16:30
 Program 2.
 End due to: irrigation end
 Irrigation: 00:00
```

## How can I see the anomalies in the general consultation?

```
        GENERAL CONSULTATION

Mon 05/07/10 17:28
New anomalies: 05
```

Press the 'Function' key and go to number '3. Readings' and 'Enter'.

```
             FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
```
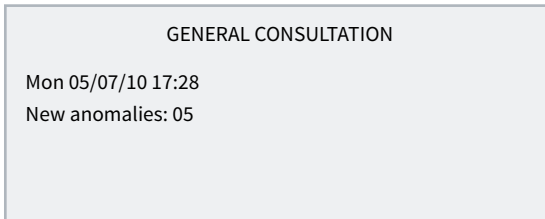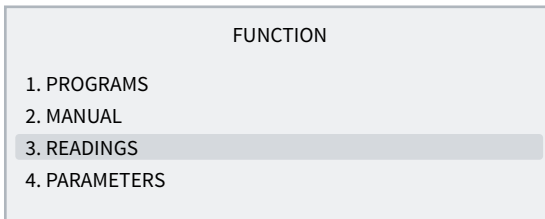
Go to number '2. Anomalies' and 'Enter'.
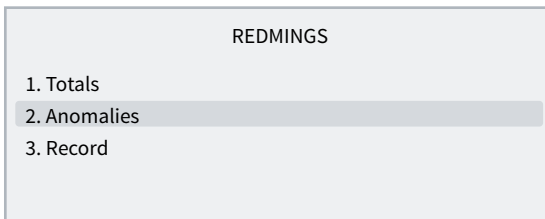
```
             REDMINGS

1. Totals
2. Anomalies
3. Record
```

Change to the previous and next anomaly using the up and down arrows.

```
             ANOMALY

N33   05/07/10 17:15


Definitive stop
DM input
```
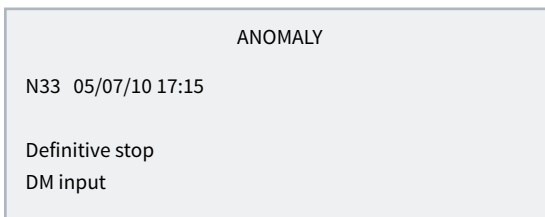
Press or 'Function' or 'Consultation' to exit. In the general consultation, new anomalies are set to 0 once read.

Go to section 5.2 Anomaly readings to see the anomalies.

# 2  TECHNICAL SPECIFICATIONS

| General power supply | | |
|---|---|---|
| Voltage | | 12 Vdc   +15% -10% |
| Frequency | | -- |
| Power consumption | | Less than 12.5 W  (0.3 W standby) |
| Fuse | Input | Thermal (PTC) 1.1 Amp. at 25°C, auto-resettable |

| Output power source | | |
|---|---|---|
| Voltage | | From 12 to 24 Vdc or Vac (maximum 30 V) |
| Fuse | Input "R+" | Thermal (PTC) 3.0 Amp. at 25°C, auto-resettable |

| Outputs | | |
|---|---|---|
| Digital | Number | 9, extendable to 18 and 27. |
| | Type | By relay contact, with 24 VAC potential (external transformer). |
| | Limits | 30 Vac / 30 Vdc, 1 Ampere, 50-60 Hz,  CAT ll (per output) |
| All outputs have double isolation in respect to the power output. | | |

| Inputs | | |
|---|---|---|
| Digital sensors | Number | 6, expandable (option) to 11 on non-Latch models. |
| | Type | Coupling options, operate at 12 or 24 V |
| Analog (option) | Number | 2 |
| | Type | 4-20 mA, 0-20 V.  (on demand, with galvanized separation) |
| | Number | 4 |
| | Type | 4-20 mA |

| Environment | | | Weight | |
|---|---|---|---|---|
| Temperature | -5°C to 45°C | | Box model | From 1.0 kg to 1.6 kg |
| Humidity | < 85% | | Built-in model | From 1.1 kg to 1.5 kg |
| Altitude | 2000 m | | | |
| Pollution | Grade 2 | | | |

| Memory and clock safeguard | |
|---|---|
| Memory | No maintenance, 10 years for parameters and programs in FRAM memory and FLASH memory records |
| Clock | 48 hours without power |

| Statement of compliance | |
|---|---|
| Complies with Directive 89/336/EEC for Electromagnetic Compatibility and Low Voltage Directive 73/23/EEC for Product Safety Compliance. Compliance with the following specifications was demonstrated as indicated in the European Community Official Gazette. | CE |

| Symbols that may appear on the product | | | |
|---|---|---|---|
| Protective ground terminal | Antenna | Ground terminal | Double isolation |

This symbol indicates that electronic devices should not be disposed of along with household waste at the end of their useful life. The product must be taken to the corresponding collection point for electric and electronic unit recycling and correctly processed pursuant to Spanish legislation.

# 3   PROGRAMS

A program is an automatic irrigation command that includes which sectors apply, during what time and for how many irrigation and fertilizer units. The Agrónic has 50 independent or sequential programs and each program can have up to 4 sectors.

To access the menu, press 'Function' on the keypad, select 1.Programs, 'Enter'.

```
                    FUNCTION
 1. PROGRAMS
 2. MANUAL
 3. READINGS
 4. PARAMETERS
 5. PIVOTS
```

```
                    PROGRAMS
 P01        - Tomato. S03  S04
 P02        – Pepper. S05
 P03        - Pool. S06
 P04        - . S02  S01
 P05        - . S07  S08
```

```
               ① PROGRAM 01

 ② Sectors: 03  04
 ③ SMTWTFS          ④ Start: 10:30
 ⑤ Irrigation: 02:40
 ⑥ F1  01:05            F2  00:12
```

```
 1   Program number
 2   Number of irrigation sectors
 3   Days of the week / frequency of days
 4   Start time / sequential start or by determining
     factor
 5   Irrigation units in time or volume
 6   Fertilizer units in time or volume
```

The values entered into programs may vary depending on what is configured in 'Function - 4. Parameters - 5. Programs' and 'Function - 4. Parameters - 10. Installer - 5. Various'.

```
             PROGRAM 02 Pepper

 D—X-V-     Start: 10:30
 ............................................
 Sequential prog.: 01
 Start: 99:01
 ............................................
 D—X-V-     (Start. Condi.)
```

Sectors (00 ... 30): sector that will activate the program. There can be up to 4 sectors as configured in 'Function

- 4. Parameters - 10. Installer - 5. Various'. If they are all 0, the program is inactive.

If the start is scheduled or conditional and depending on what is configured in 'Function - 4. Parameters - 5. Programs - Days of the week' one of these two questions are asked:

days of the week: (SMTWTFS) Days of the week to irrigate, start with Sunday. Press the 'Daily log/8' key to activate or deactivate all of them. The dash indicates that it is not activated. If the program has a sequential start type, it is not configured.

Freq: (frequency of days) The number of days to irrigate. At 1 it irrigates every day, at 2 it irrigates every other day, at 3 it irrigates one day yes and two No. If the program has a sequential start type, it is not configured.

Depending on what is configured in 'Function - 4. Parameters - 5. Programs - Start Type" one of three questions are asked:

## Schedule start

Start: the program starts when this time is reached. From 00:01 to 23:59, the time 00:00 is not valid.

## Sequential start:

Program sequential: the program starts when the program that is configured here ends. From 0 to 50. At 0 it does not start. According to the configuration of 'Function - 4. Parameters - 10. Installer - 5. Various' the sequential program is after 99.

## Conditional start

There is no need to enter any value. To start, there must be a 'Start' or 'Start/Stop' determining factor assigned in 'Function - 4. Parameters - 5. Programs'.

Irrigation: amount of irrigation in the program. In time, the maximum is 99:59 or 99'59"; in volume, it is 99999 or 9999.9 or 999.99 m3. It depends on the configuration of 'Function - 4. Parameters - 10. Installer - 5. Various'. The units are configured in 'Function - 4. Parameters - 5. Programs' and are independent for each program. If irrigation is by volume, you can also ask for a time and the program ends when the volume or time ends (from

0 to 99:59). This is configured in 'Function - 4. Parameters - 10. Installer - 5. Various'.

```
                  PROGRAM 02 Pepper

Sectors: 03  00
SMTWTFS                 Start: 10:30
Irrigation: 02:40
F1 00:55                F2 00:00
F3 00:00
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Activations: 04  03:00
Schedule: 00:00 – 00:00
Period: 06/01 to 06/15
```

Fertilizer (F1, F2, F3, F4): amount of fertilizer in the program. In time, the maximum is 99:59 or 99'59"; in volume, it is 99999 or 9999.9 or 999.99 liters. It depends on the configuration of 'Function - 4. Parameters - 10. Installer - 5. Various'. The units configured in 'Function - 4. Parameters - 10. Installer - 5. Various' are common for all programs.

Modify pre- and post-irrigation in 'Function - 4.Parameters - 5. Programs.

In 'Function - 4. Parameters - 10. Installer - 5. Various' configure whether the following three questions will appear:

Activations: there may be several activations of the programs every certain amount of time. First, enter the number of times the program will be activated (from 0 to 99) and then how often (from 0 to 99:59). Manual start only performs one of the activations. If a program has pending actions, it can be seen in 'Consultation - 2. Programs'.

Schedule: (active schedule)If the program starts due to determining factors, it can only do so within this schedule. The active schedule does not affect manual activations. If left at 0, this indicates that the active schedule is all day. When a program that is irrigation leaves the active schedule, it can continue with irrigation or stop, depending on what is configured in 'Function - 4. Parameters – Installer – Various'.

Period: (active period) the program is deactivated outside of the active period. If left at 0, it is always activated.

## 3.1.  SEQUENTIAL PROGRAMS

When various sectors must be irrigated one after another, sequential programming may be used. This consists of having an initial program configured for certain irrigation days and a start time and the rest of the programs in the irrigation sequence configured in 'Function - 4. Parameters - 5. Programs' for a type of sequential start.

> ### 🎖 Example
>
> It starts with program 10 in sector 5, everyday at 7:30; once the irrigation has finished, program 11 will automatically start and so on until the last program, in this case number 14.

---

**PROGRAM 10**

Sectors: 05
SMTWTFS  Start: 07:30
Irrigation: 02:08

**PROGRAM 11**

Sectors: 06
Sequential prog.:  10
Irrigation: 01:44

**PROGRAM 12**

Sectors: 07
Sequential prog.:  11
Irrigation: 01:55

**PROGRAM 13**

Sectors: 08
Sequential prog.:  12
Irrigation: 02:23

**PROGRAM 14**

Sectors: 09
Sequential prog.:  13
Irrigation: 01:17

NOTES

- Any order of programs is acceptable, incremental, decrement, random.

---

- More than one program can be sequenced when the first has terminated.

- For a program sequence to stop functioning until there is a new command, just cancel out the days of the week in the first program. Enter the days again enable the sequence.

- When a temporary malfunction (TM) occurs while a sequential program is running, the program currently in operation will be stopped and the next one will continue. If the cause of the malfunction remains, it successively stops all the programs in the sequence, registering it in the records.

The installer can prepare the unit to carry out sequential programs by entering the code '99' in place of the start time and the program number that will precede and initialize it, in the place of the start minute.

**PROGRAM 10**

Sectors: 05
SMTWTFS  Start: 07:30
Irrigation: 02:08

**PROGRAM 11**

Sectors: 06
- - - - - - -  Start: 99:10
Irrigation: 01:44

**PROGRAM 12**

Sectors: 07
- - - - - - -  Start: 99:11
Irrigation: 01:55

**PROGRAM 13**

Sectors: 08
- - - - - - -  Start: 99:12
Irrigation: 02:23

**PROGRAM 14**

Sectors: 09
- - - - - - -  Start: 99:13
Irrigation: 01:17

# 3.1.1    Alternating sequential programs

An alternating sequence permits the starting program in one sequential irrigation program to be alternated with a different program in the sequence.

To do this, the installer must configure the option for sequential programs to be alternating ones, keeping in mind that in this case the sequence is ordered from the lowest program number to the highest.

Using the example in the previous section, the first time the program starts it will start with program 10 and terminate with 14. The next time the program starts, it will start with 11 and terminate with 10 and so on.

The program query will display the text 'alternate start' to indicate which program starts in the next activation. This information will be updated once the current irrigation sequence has terminated.



Alternating sequential programs
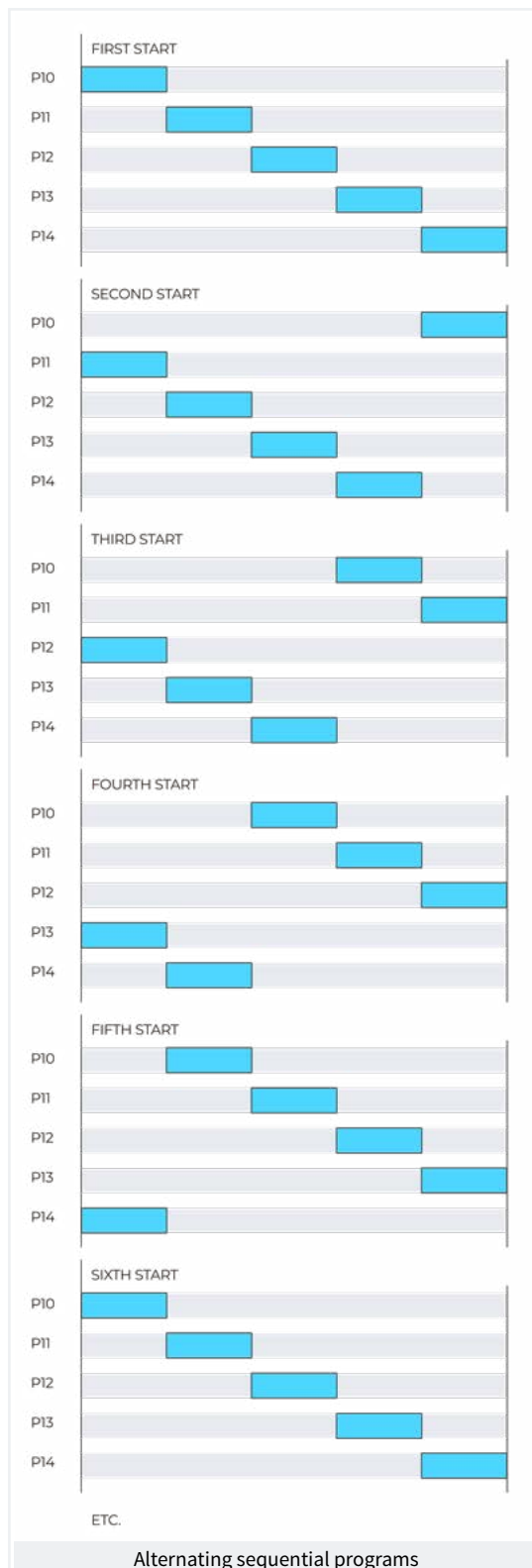
## 3.2. FERTILIZATION

In series fertilizer, the fertilizers are applied one after another; the first is applied when the pre-irrigation ends and the fertilizer pre-mixing time has finished, if there is one. When one fertilizer has finished, pre-mixing on the next one can begin.



Series fertilization (one behind the other)
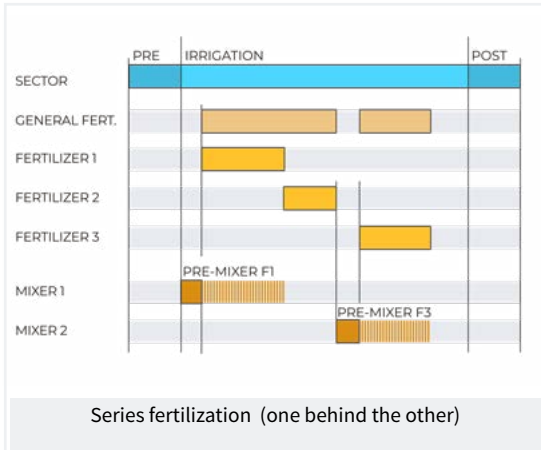
In parallel fertilization, all the fertilizers are applied at the same time once the pre-irrigation and corresponding pre-mixing times have terminated.



Parallel fertilization (all at the same time)
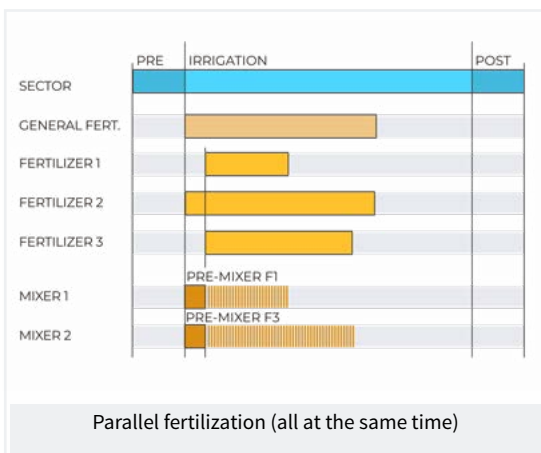
In uniform parallel fertilization, fertilizer is dispersed evenly between the pre- and post-irrigation.



Parallel fertilization uniform distribution
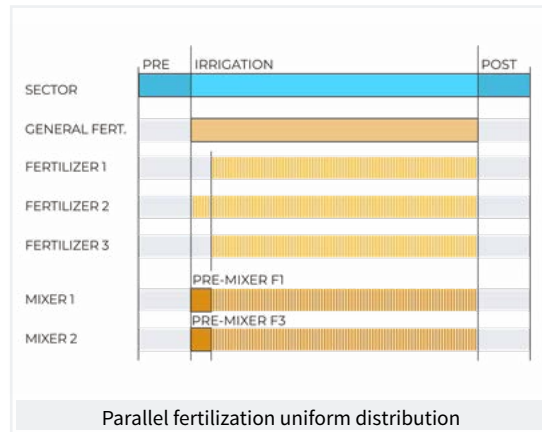
The fertilizer general will always remain on whenever one of the fertilizers is activated.

If a fertilizer is being applied within the post-irrigation area, it will be terminated immediately and an anomaly will be recorded.

# 4   MANUAL

Manual commands allow actions to be carried out immediately in Agrónic.

To access the menu, press '**Function**' on the keyboard, select '**2. Manual**', '**Enter**'.

| FUNCTION |
| --- |
| 1. PROGRAMS |
| 2. MANUAL |
| 3. READINGS |
| 4. PARAMETERS |
| 5. PIVOTS |
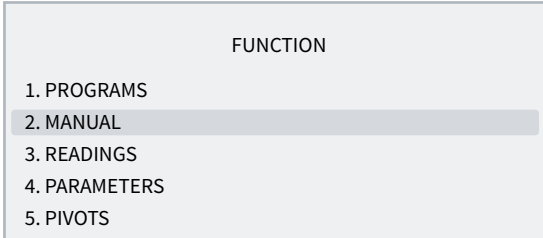
It is divided into twelve sections. To enter one of them, just press the corresponding index number or move to the selection with the arrow keys and then press '**Enter**'.

| MANUAL |
| --- |
| 1.  Out of service |
| 2.  STOP |
| 3.  Program |
| 4.  Filters |
| 5.  Clock                    ▼ |

| |
| --- |
| 6.  Terminate stops |
| 7.  Determining factors |
| 8.  Sectors |
| 9.  Sensors |
| 10. Totals erasure |
| 11. Outputs |
| 12. Pivot |
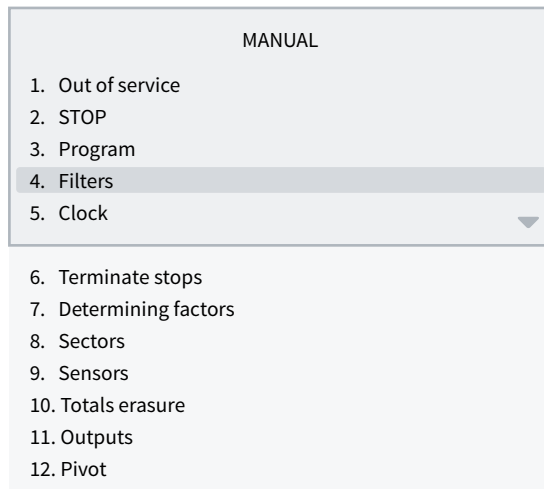
If a menu has more than 5 lines, the '**↓**' symbol will be displayed to indicate that they do not fit on the screen, so press the index number or move the key '**↓**' to access them.

## 4.1.  OUT OF SERVICE

When it enters out of service, the irrigation in progress will end and no new irrigation will begin while it remains in this status. After 'Out of Service' the programming will be operational again and the irrigation will begin when the conditions in each program are met.

It is used to stop irrigation for a period of time without de-configuring any program.

## 4.2. STOP

When entering 'Stop', the irrigations in progress are postponed and it will allow new irrigations to start, postponing them as well. When the 'Stop' status is complete, programming will resume at the same point where it was stopped. If a program is started during the time it is in 'Stop', it will be postponed.

It is used when irrigation must be stopped momentarily and for a short time.

## 4.3. PROGRAMS

Program *(00 ... 01 ... 50)*: program number.

### If the program is stopped

Start *(Yes | No)*: 'Yes' manually starts the irrigation program. There are several points to keep in mind when manually starting a program:

- If there are several activations, only one will be started.

- If it is in a program sequence, it will continue from this program to the end.

- It can be started manually even if the program is outside the active schedule or active period.

### If the program is activated

```
            MANUAL PROGRAMS

Program: 12
 Stop: no
 Out of service: no
 Interrupt: 000 h
 Frequency: 00
 Activations: 02
 Time between act.: 00:44
```

Stop *(Yes | No)*: 'Yes' manually stops the irrigation program. There are several points to keep in mind when manually stopping a program:

If there are pending activations, they will not stop.

If it is in a program sequence it stops and the next program will not continue.

Out of service *(Yes | No)*: 'Yes' if the program is activated it stops and cancels irrigation. It will not start again while it is in out of service.

Suspend *(000 ... 250 h)*: during the time indicated here, the program will not irrigate and the starts are lost. If the program is irrigating when it is suspended, the irrigation is canceled. At the end of this time, the program returns to normal operation.

Frequency *(00 ... 99)*: meter of days remaining until the next irrigation: at 0 it irrigates today, at 1 it irrigates tomorrow. It is only shown if 'Function - 4. Parameters - 5. Programs' is not configured to work by days of the week.

Activations *(00 ... 99)*: pending activation meter. At 0 it is not irrigating.

Time between activations *(00:00 ... 99:59)*: meter of time remaining between activations. Starts counting at the start of activation.

## 4.4. FILTERS

### If filter cleaning is stopped:

activate cleaning *(Yes | No)*: 'Yes' manually starts cleaning. If there is no irrigation program, the pump is not activated, only the filter outputs.

### If filter cleaning is activated:

stop cleaning *(Yes | No)*: 'Yes' for filter cleaning. Whether it is with the outputs activated or whether it is in the waiting time between cleanings.

### If filter cleaning is in malfunction:

stop malfunction *(Yes | No)*: 'Yes' restarts filter cleaning after a malfunction. The malfunction occurs when more commands have been given from the SC input than the maximum number of consecutive cleanings configured in 'Function - 4. Parameters - 2. Filters'.

## 4.5. CLOCK

To change the date and time of Agrónic. Without power, the Agrónic can keep time for 48 hours.

## 4.6. TERMINATE STOPS

When the definitive malfunction input (AD) is activated or the irrigation meter input (CR) has not received pulses for longer than the configured time, it goes into definitive malfunction; it appears as 'Final Stop' in the general query. The affected programs stop irrigation and must be reset manually.

Finish

- Stops and malfunctions *(Yes | No)*: 'Yes' resets the programs so they can continue irrigation.

- Irrigation postponed *(Yes | No)*: only if the programs are reset.

- Yes: the programs affected by the definitive stop are stopped, canceling the pending irrigation.
- No: the programs affected by the definitive stop continue irrigation at the point where they were when the stop began.

Reactivate SMS: if the Agrónic has SMS sending and the maximum SMS limit per day has been exceeded, it asks if you would like to restart the sending. The sending is automatically rearmed when the day changes.

## 4.7. DETERMINING FACTORS

When you do not want a determining factor to work and you do not want to de-configure or erase it, it can be placed out of service.

Out of service *(Yes | No)*:

- yes: the determining factor does not work, it is as if it were not there.
- No: the determining factor works normally.

## 4.8. SECTORS

```
              SECTOR MANUAL

Sector: 01
  In automatic:      no
  In manual:         [Run]
                     [Stop]
```

In automatic *(Yes | No)*:

- yes: the programs control the sector start and stop.

- No: the sector is controlled manually.

In manual *(Yes | No)*: it is only effective if it is in 'Automatic: no'.

- Stop: the sector is stopped.

- Start: the sector is running.

If a sector is in manual and a program associated with that sector is entered, the program will be postponed until the sector is set to automatic.

If a sector is started manually and has an associated pump, the pump will be activated.

The units irrigated when the sector is in manual operation are recorded in the history and totals.

## 4.9. SENSORS

To change the value of virtual analog sensors.

The value of the virtual analog sensor can also be changed by SMS or from the Agrónic PC program.

## 4.10. ERASE TOTALS

To erase the sector and meter totals.

It is done from 'Function - 4. Parameters - 10. Installer' and a code is requested to access.

## 4.11. OUTPUTS

To activate an Agrónic output directly with no control. It should only be used for testing the units.

Up to 6 outputs can be activated. Enter the number to activate and to deactivate. To exit the screen, all outputs must be deactivated.

# 5   READINGS

In readings, there is information regarding the total times and volumes as well as the incidents recorded as anomalies.

To access the menu, press 'Function' on the keypad, select '3.Readings', 'Enter'.

```
                FUNCTION

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
5. PIVOTS
```

It is divided into four sections. To enter one of them, just press the corresponding index number or move to the selection with the arrow keys and then press 'Enter'.

```
                READINGS

1. Totals
2. Anomalies
3. Record
4. History
```

The operation of the keypad in the different sections of Readings is as follows:

▼ See the next sector, sensor or record.

▲ See the previous sector, sensor or record.

🟢 See the next day of records or history.

🟢 See the previous day of records or history.

## 5.1.   TOTAL READINGS

It shows the total sector values, in time and volume and the meter sensors since the last erase date. Erase in 'Function - 2. Manual - 10. Totals erasure'.

```
             TOTAL READINGS

1. Sector
2. Meter sensor
```

### 1. Sector

The first screen shows the irrigation and fertilizer totals and the last erasure date and time. The total volume is obtained by adding the volumes of each sector. Those totaled by sector are shown from the second screen.

```
             TOTAL READINGS

TOTAL  05/03/10  12:23
Irrigation: 033:25      002541 m3
F1:         000:25      000025 L
F2:         000:33      000031 L
```

```
             TOTAL READINGS

Sector 1.  North zone
Irrigation: 002:30      000016 m3
F1:         000:10      000005 L
F2:         000:20      000010 L
```

Sector: sector number and name that shows the total.

Irrigation:

- time: time, in hours and minutes, that this sector has been activated.

- Volume: if the sector has an associated meter, it shows the volume that has passed through it. If a meter is for more than one sector and they are open at the same time, the volume is distributed based on the expected flow. If there is no planned flow, it is distributed equally to all sectors. The volume format is configured in 'Function - 4. Parameters - 10. Installer - 5. Various'.

Fertilizers: fertilizers F1 to F 4 are shown.

- Time: time, in hours and minutes, that the fertilizer has been activated while irrigating the sector.

- **Volume**: if the fertilizer has an associated meter, it shows the volume that has passed through it. If more than one sector is activated when fertilizer, the volume is distributed based on the expected flow of each of the sectors. If there is no planned flow, it is distributed equally to all sectors. The volume format is configured in 'Function - 4. Parameters - 10. Installer - 5. Various.

### 2. Meter sensor

```
              TOTAL READINGS

Meter: 01   Main
Volume: 324.000 m3
Leak: 001.200 m3
From 01/01/05 12:30
```

**Meter**: number and name of the meter sensor it displays.

**Volume:** total volume that has passed through the meter.

**Leak**: if the meter sensor is associated with sectors and pulses have been received without any of the sectors being open, it is considered a leak. This shows the volume that has passed through the meter under these conditions.

## 5.2. ANOMALY READINGS

Displays the record of events configured as anomalies. Configuring an event as an anomaly in 'Function - 4. Parameters - 10. Installer - 2. Events'.

Because they are anomalies, when they occur, they appear on the general query screen and in this list so that they are accessible more quickly.

Anomalies are also included in the record.

The following section shows a list of all the events that Agrónic can record.

## 5.3. RECORD READINGS

The events that have been logged are displayed, including those that are configured as anomalies (An).

| No. | Affects | Description | (*) |
|---|---|---|---|
| 1 | Agrónic | Power cut less than 1 minute. | |
| 2 | Agrónic | Electrical cut between 1 and 10 minutes. | An |
| 3 | Agrónic | Electrical cut between 10 and 60 minutes. | An |
| 4 | Agrónic | Power cut greater than 60 minutes. | An |
| 5 | Agrónic | Error in the analog sensor. | An |
| 6 | Manual | Enter or exit STOP. | |
| 7 | Manual | Enter or exit Out of service. | |
| 8 | Manual | Manual action on a program (start, stop). | |
| 9 | Manual | Terminate stops and malfunctions. | |
| 10 | Manual | Manual action on a sector (manual stop, manual start, automatic). | |
| 11 | Manual | Manual actuation on a digital output (active or stopped). | |
| 12 | Manual | Totals erased. | |
| 13 | Manual | Date and time changed. | |
| 14 | Manual | The value of a virtual analog sensor has changed. | |
| 15 | Manual | Manual action on filter cleaning (start cleaning). | |
| 16 | Erased | Programs, sectors, determining factors, etc. have been erased. | |
| 17 | Program | Program start. Shows the reason for the start and the sectors being irrigated. | |
| 18 | Program | Modified irrigation. Shows the determining factor that modifies it and the amount. | |
| 19 | Program | Modified fertilizer 1. Shows the determining factor that modifies it and the amount. | |
| 20 | Program | Modified fertilizer 2. Shows the determining factor that modifies it and the amount. | |
| 21 | Program | Modified fertilizer 3. Shows the determining factor that modifies it and the amount. | |
| 22 | Program | Modified fertilizer 4. Shows the determining factor that modifies it and the amount. | |
| 23 | Program | The program has been postponed. Shows the reason. | |
| 24 | Program | Start in course. Shows the irrigation amount. | |
| 25 | Program | Fertilization begins. Shows the fertilizer and the amount. | |
| 26 | Program | End fertilizer. Shows the amount of fertilizer that is left pending and the reason why it stopped. It is only recorded if there is excess fertilizer. | An |
| 27 | Program | End of the program. Shows the reason. | |
| 28 | Filters | Start of filter cleaning. Shows the reason. | |
| 29 | Filters | Uncontrolled filter cleaning. The consecutive cleaning limit has been surpassed. | An |
| 30 | Diesel | There is oil pressure. Check that there is pressure before starting the pump. | An |
| 31 | Diesel | Does not start. All attempts have been used and the pump has not started. | An |
| 32 | Diesel | Oil pressure error. The pressure has dropped with the pump running. | An |
| 33 | Determining factor | Definitive Stop determining factor activated. | An |
| 34 | Determining factor | Temporary Stop determining factor activated. | An |
| 35 | Determining factor | Conditional Stop determining factor activated. | |
| 36 | Determining factor | Conditional Stop determining factor deactivated. | |
| 37 | Determining factor | Program Start determining factor activated. | |
| 38 | Determining factor | Program Start/End determining factor deactivated. | |
| 39 | Determining factor | Warning determining factor activated. | |

| No. | Affects | Description | (*) |
|-----|---------|-------------|-----|
| 40 | Determining factor | Warning determining factor deactivated. | |
| 41 | Determining factor | Determining factor for modifying irrigation. Shows the % by which the program is modified. | |
| 42 | Determining factor | Determining factor for modifying fertilizer. Shows the % by which the program is modified. | |
| 43 | Determining factor | End determining factor due to rain. Shows total rain. | |
| 44 | Determining factor | Stop fertilizer determining factor activated. | |
| 45 | Communication | SMS limit per day exceeded. | An |
| 46 | Communication | Command received by SMS. Shows the command and the phone that sent it. | |
| 47 | Communication | Communication error with GPRS modem. | An |
| 48 | Communication | Start and end of communication with the PC. | |
| 49 | Communication | Communication error with AgroBee modules. | |
| 50 | Communication | Communication error with the radio link. | An |
| 51 | Communication | GPRS communication. Daily data consumption. | |
| 52 | Communication | GPRS communication. Monthly data limit exceeded. | |
| 53 | Communication | Communication error with the WiFi module. | |
| 54 | Pivot | Start irrigation. Shows the reason. | |
| 55 | Pivot | End irrigation. Shows the reason. | |
| 56 | Pivot | Postponed irrigation. Shows the reason. | |
| 57 | Pivot | Position (Degrees °). Completed run / Change of area / Start or end of the course. | |
| 58 | Pivot | Manual start / Manual stop. Shows the time that it will be in manual. | |
| 59 | Pivot | Alarm activated | An |
| 60 | Sector | Flow detector alarm. | An |

(*): records marked 'An.' are assigned from the factory as 'Anomalies'.

## 5.4. HISTORY READINGS

Shows the daily totals of sector and meter sensors and the daily average of the analog sensors.

The Agrónic saves the history of the current day and the previous six days.

The Agrónic makes records every 10 minutes, but to see them in detail, a connection to the Agrónic APP / VEGGA  or Agrónic PC is required.

HISTORY READINGS

1. Sector
2. Meter sensor
3. Analog sensor

## 5.4.1 Sector history

For each sector, a screen is shown with the date and the name associated with the sector.

```
         SECTOR 1 HISTORY

05/11/23   Plot U1
Irrigation: 002:43   00048.3 m3
F1: 0012.5 L                    F2: 0000.0 L
F3: 0033.9 L
```

Irrigation:

- **Time**: time, in hours and minutes, that this sector has been activated.

- **Volume**: if the sector has an associated meter, it shows the volume that has passed through it. If a meter is for more than one sector and they are open at the same time, the volume is distributed

based on the expected flow. If there is no planned flow, it is distributed equally to all sectors.

Fertilizers:

Fertilizers F1 to F4 are shown.

- **Time**: time, in hours and minutes, that the fertilizer has been activated while irrigating the sector.

- **Volume**: if the fertilizer has an associated meter, it shows the volume that has passed through it. If more than one sector is activated when fertilizer, the volume is distributed based on the expected flow of each of the sectors. If there is no planned flow, it is distributed equally to all sectors.

## 5.4.2 Meter sensor history

For each meter sensor, a screen is displayed with the date and the name associated with the sensor. Configure the format and units to display the volume in the 'Function - 4. Parameters - 8. Sensors - 3. Meters' section.

```
         METER HISTORY 5

05/31/01   CR n4
Total: 00167.500 m3
Leak: 00000.20 m3
```

**Total**: total volume that has passed through the meter.

**Leak**: if the meter sensor is associated with sectors and pulses have been received without any of the sectors being open, it is considered a leak. This shows the volume that has passed through the meter under these conditions.

## 5.4.3 Analog sensor history

Up to 40 analog sensors can be managed by the Agrónic 2500 and they are all are recorded in 10-minute fractions. This is used for a posterior detailed analysis using graphs in the Agrónic APP / VEGGA / Agrónic PC irrigation management program. The Agrónic 2500 only display the daily averages, the lowest and the highest readings for the different days contained in the history.

```
      ANALOG SENSOR 1 HISTORY

05/31/16   Radiation
0308 W/m2
Max:0622 W/m2 Min:0018 W/m2
```

# 6   CONSULTATION

The Reports menu is accessed by the 'Consult' key; once the menu has been selected, we will find detailed information on what the Agrónic 2500 is doing.

## 6.1.  GENERAL CONSULTATION

A summary of the most important information about Agrónic is shown on a single screen.

The lines on the screen vary the information depending on what the Agrónic is doing.

```
             CONSULTATION

   1. GENERAL
   2. PROGRAMS
   3. SECTORS
   4. FERTILIZERS
   5. FILTERS

   6. PARAMETERS
   7. SENSORS
   8. COMMUNICATION
   9. AGRÓNIC
   10. PIVOT
```

```
          GENERAL CONSULTATION

   Mon  01/01/05 10:12:35
   New anomalies: 05
   S: 01 02
   M:12  F:-2-4
   IL
```

| Query | Description |
|---|---|
| Mon 01/01/05 10:12:35 | Current date and time |
| New anomalies: 05 | Number of anomalies that have been recorded since the last time "Readings – Anomalies" was entered. |
| * OUT OF SERVICE * | The Agrónic is out of service. To exit this status, go to "Function – Manual – Out of service". |
| * STOP * | The Agrónic is in STOP. To exit this status, go to "Function – Manual – STOP". |
| * DEFINITIVE STOP * | One of the programs that was irrigating has been stopped by the AD input or an error in the irrigation meter. To exit this status, go to "Function – Manual – Stops and malfunctions". |
| * FLASH ERROR * | An error has occurred in the internal memory. The unit must be repaired. |
| No irrigation under way | There are no sectors activated. |
| S: 01 02 | If there are irrigation sectors, it shows which ones they are. |
| M:12 | Pumps 1 and 2 activated. |
| F: - 2 - 4 | Fertilizers 2 and 4 activated. |
| A: – 2 – 4 | Mixers 2 and 4 activated. |
| L: 1 | Cleaning the filter 1. |
| P: 2 | Pivot 2 activated |
| Diesel: stopped preheat. 20" Start 1 wait 30" 20" pump enters activated salt. 10" pump stopping 5" in malfunction | Diesel pump status (only with diesel option): pump stopped. Preheating output activated (indicates the remaining time). Start output activated (indicates the number of attempts). Waiting between starts (indicates the time remaining). Diesel activated, waiting to activate M1 (indicates time remaining). Diesel and M1 activated. There are no sectors activated, waiting to stop M1 and then the diesel. The stop output is activated (indicates the time remaining). Diesel in malfunction, it has not started after 4 attempts. It will attempt again at the next irrigation. |
| PA | Oil pressure gage active. |

## 6.2. PROGRAM CONSULTATION

```
         PROGRAM CONSULTATION

01R     02a     03.     04.     05.
06.     07.     08.     09.     10.
11.     12.     13.     14.     15.
16.     17.     18.     19.     20.
Program No.: 01
```

```
     CONSULTATION P01 OLIVE TREES

Irrigating
Sectors: 01 02
Irrigation: 01:27
Fert. 1: 00:05
```

The first screen shows all the programs; The status is summarized next to the program number:

- r = irrigating

- a= postponed

- p= activations pending

- d = definitive stop

- f = out of service

- s = suspended

For a more detailed query of a program, enter the number and press enter.

The following table shows all the information about the query.

| Query | Description |
|---|---|
| Query P01 Olive trees | Program number and associated name |
| Stopped | Program stopped. |
| Irrigating | Program activated. |
| Manual run | Program activated manually. |
| DEFINITIVE STOP | Program stopped due to a Definitive Stop determining factor.<br>It is manually reset in "Functions – Manual – Terminate stops". |
| OUT OF SERVICE | Program Out of Service.<br>To exit this status, go to "Function – Manual – Programs". |
| Activations pending | Program stopped because it was between two activations. |
| Postponed,<br>  cleaning filters<br>  Fert. overlap<br>  sector limit<br>  t. between starts<br>  unit in STOP<br>  conditional stop<br>  sector already active<br>  sector in manual<br>  active schedule<br>  definitive stop<br>  sequential act.<br>  priority<br>  diesel start-up | Program started, but irrigation has stopped for some reason:<br>  Because it is cleaning filters.<br>  Because a program that uses the same fertilizer is activated.<br>  Due to having exceeded the limit of active sectors in the base.<br>  Due to having a start determining factor and not complying with the time between starts.<br>  Because the Agrónic is in STOP.<br>  Because there is a Stop determining factor activated.<br>  Because there is another program activated with the same sector.<br>  Because a sector of the program is in manual.<br>  Because it is outside of active hours.<br>  Because there is a Stop determining factor activated.<br>  Because there is an active sequential program.<br>  Because there is a program with a higher priority active.<br>  Because it is starting the diesel pump. |
| Irrigation: 01:27 | Amount of irrigation remaining to finish. |
| Irrigation: 0067 m3 – 01:21 | Volume remaining to finish and safety time remaining to finish. |
| Pre-irrigation: 00:00 | Amount of pre-irrigation needed to start fertilization.<br>It only appears if fertilizer and pre-irrigation are configured. |
| Post-irrigation: 00:00 | Amount of finishing remaining to finish.<br>It only appears if fertilizer and post-irrigation are configured. |
| Fert.1, 2, 3, 4: | Amount of fertilizer remaining to finish. |
| Frequency: 02 | If the start is by frequency of days, it shows the days left to irrigate. |
| Activations 02 – 02:38 | Going by activations shows those that are pending and the time remaining until the next start. |
| Cond. 01 02 08 | List of determining factors that are associated with the program. |
| Pause to start: 00:15 | If the start is by determining factor and there is a safety time between starts, the time remaining to be able to start again is shown. |
| Alternate start | Indicates that it is the first program in an alternating sequence. |
| P02 Sequential | Indicates that it is sequential from program 2. |

## 6.3. SECTOR CONSULTATION

```
        SECTOR CONSULTATION

01R      02.      03.      04.      05.
06.      07m      08.      09.      10.
11.      12.      13.      14.      15.
16       17       18       19       20
Sector: 01
```

```
        CONSULTATION S01

Active
Program: 01 Olive trees
Irrigation: 01:27
```

The first screen shows all the sectors. Its status is briefly indicated next to the sector number:

- r = irrigating

- m = in manual run

- p = in manual stop

- e = flow detection error

For a more detailed query of a sector, enter the number and press enter.

The following table shows all the information about the query.

| Query | Description |
|---|---|
| Query S01 zone 1 | Sector number and associated name |
| Status: stopped | Sector stopped or waiting for water hammer to open. |
| Status: active | Active sector, waiting for water hammer to close or waiting for active diesel. |
| Status: manual run | Manually activated sector. |
| Status: manual stop | Manually stopped sector. |
| Program: 01 Olive trees | Program that controls the sector and associated name. |
| Irrigation: 01:27 | Amount of irrigation remaining to stop the sector. |
| Irrigation: 0025 m3 – 00:15 | Volume remaining to finish and safety time remaining to finish. |

## 6.4. FERTILIZER CONSULTATION

```
        FERTILIZING CONSULTATION

F1: 0000.0 L              A1: 000"
F2: 0087.5 L              A2: 024" Mar.
F3: 0000.0 L
F4: 0120.0 L              A4: 000"
Cleaning: 020"
```

```
        FERTILIZING CONSULTATION

F1: 000%
F2: 018%
F3: 035%
F4: 009%
```

If no program that fertilizes is activated, the fertilizers are shown at 0. If a program that fertilizes has been activated, it shows the amount left to finish.

If the fertilizer has a mixer (M1, M2, M3 or M4), it shows the time pending in pre-mixing, the start or the mixer.

If the final fertilizer cleaning is running, the time remaining shows.

If the fertilization type is uniform, it also reports the injection percentage of each fertilizer.

## 6.5. FILTER CONSULTATION

```
        FILTER CONSULTATION

Cleaning stopped
Units between cleanings:
time: 0212'
Volume: 0200 m3
```

```
        FILTER CONSULTATION

Filter wash 1
Active: 20"
```

If it is between two cleanings: the time and volume remaining until the next cleaning shows. If cleaning is done by pressure gage, the units between cleanings are at 0. The units are discounted when water passes through the pump related to the filters.

If cleaning: shows the filter being cleaned, whether the filter is active or paused and the time remaining to finish. If there is an initial waiting time, it shows how much time is remaining before cleaning the first filter.

If it is in malfunction: it goes into malfunction when the maximum number of consecutive cleanings is exceeded. It must be reset manually in 'Function - 2. Manual - 4. Filters'.

If it is postponed by STOP: if the Agrónic is in STOP when it is cleaning filters, the cleaning is postponed. On exiting STOP, cleaning resumes at the point where it was.

## 6.6. DETERMINING FACTOR CONSULTATION

```
      DETERMINING FACTOR CONSULTATION

01C      02.      03f      04.      05.
06.      07.      08.      09d      10.
11.      12.      13.      14.      15.
16.      17.      18.      19.      20.
Determining factor No.: 01
```

```
         C01 POOL CONSULTATION

Not active, 05.3 m
Type: conditional stop
Ref.: 02.5 m
Sensor: a01 level
Delay: 000"
```

The first screen shows all the determining factors; The status is briefly indicated next to the determining factor number:

- c = active (conditions)
- d = active (definitive stop determining factor)
- f = out of service

Enter the number of a determining factor to see a more detailed query.

The query varies depending on the type of determining factor and the origin.

The following table shows all the information about the query.

| Query | Description |
|---|---|
| C01 Pool query | Determining factor number and associated name |
| Active | The conditions to be active are met. |
| Not active | The conditions to be active are not met. |
| [0] [1] | If the source is a digital sensor, the status is shown. |
| 03.5 bar | If the source is an analog sensor, the last reading is shown. |
| 125.3 m3/h | If the source is the flow of a meter sensor or flow error, the instantaneous flow is shown. |
| 2450 L [2] | If the source is a meter sensor and has previous hours configured, the total time and the time in brackets are shown. |
| Sensor error | Volume remaining to finish and safety time remaining to finish. |
| Out of service | It is out of service. |

| Query | Description |
|---|---|
| Type: warning | Determining factor type. |
| Sensor: d08 sen text | Number and text associated with the source sensor. 'D' if it is a digital sensor, 'A' if it is an analog sensor and 'C' if it is a meter sensor. |
| Ref: 02.5 bar | If the source is an analog sensor or meter sensor, the reference of the determining factor is shown. |
| 10%  15% | If the origin is a flow error, the flow margins that have been configured are shown. |
| (leak) | If the origin is a flow error and the meter sensor has assigned sectors and none are open, the word leak is shown. |
| Delay: 023" | Delay meter to change the status of the determining factor. |
| Integration:2589Wm2 [24] | If the determining factor is to be modified, the origin is an analog sensor and has previous hours configured to show the integration of the sensor. The previous integration times are shown in square brackets. |

## 6.7. SENSOR CONSULTATION

Digital  Analog.  Meter

D01 [0] Sen. text
D02 [0] Sen. text
D03 [1] Sen. text
D04 [0] Sen. text
D05 [1] Sen. text

Digital  Analog.  Meter

A01 +23.7°C Sen. text
A02 0633 Wm2 Sen. text
A03 03.4 Bar Sen. text
A04 029 % Sen. text
A05 034 % Sen. text

Digital  Analog.  Meter

C01 051.0 m3/h Sen. text
C02 133.4 m3/h Sen. text
C03 0066 L/h Sen. text
C04
C05

If there is, the descriptive text of the sensor is shown.

Use the '+' and '-' keys to change from one type of sensor to another. The rest of the sensors are accessed with the arrow keys '↓'.

The Communications Query section is detailed in the Communications Manual  *r1850*
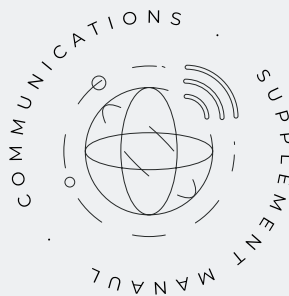
## 6.8. AGRÓNIC CONSULTATION

```
        AGRÓNIC 2500 CONSULTATION

NS: 00001              V: 3.00   Latch 2i
V. Out.: yes
Vdc: 12.7 v
GSM/GPRS modem
AgroBee-L 868          2EA          Davis
```

NS: agrónic serial number.

V: agrónic software version.

Base plate type: after the version, the type of base plate connected is indicated. The base can be with relays (Relay 1 or Relay 2) or latch (Latch 1 or Latch 2). If it is latch, indicate whether it is for 2-wire (2), 2-wire inverted (2i) or 3-wire (3) solenoids.

V.Out.: if there is voltage on the outputs. If no voltage is indicated, check the output power terminals (R+, R-) or that there is no over-consumption in the valves and that the thermal fuse has been activated. If the unit is dual voltage, this query does not appear.

Vdc: supply voltage.

GSM/GPRS modem: it has been detected that the GPRS modem is connected.

Radio 433: it has been detected that Radio Link 433 is connected.

WiFi: it has been detected that the WiFi module is connected.

AgroBee-L: it has been detected that the AgroBee-L radio module coordinator is connected. Next it indicates the radio frequency it uses: 868, 433 or 915 MHz.

2EA: expansion of 2 analog inputs has been detected.

Davis: a Davis weather station has been detected.

# 7   DIESEL OPTION ANNEX

This option increases the functions of the Agrónic 2500 by providing control over the internal combustion pump (diesel or gasoline) with an electric starter.

The operational theory is the following: when the first irrigation program is about to begin (related to Pump 1), the corresponding irrigation sector activates and the contact output is activated, as is the preheating output, if applicable. When this has finished, the first start-up is attempted.

If the unit detects oil pressure 30 seconds after the first attempt, it will consider the attempts have been successful. If this time has passed and there is no pressure, the unit will attempt to start up the pump again and so on until a total of 4 is reached. If there is no pressure after 4 attempts, activate the pump stop and go into start-up malfunction.

When it is in 'start-up malfunction' you can check in 'Function – 3. Readings – 1. Anomalies' when it occurred, which programs were running and the reason for the malfunction. The reasons may be:

```
                 ANOMALY

   N30  dd/mm/yy hh:mm
   Diesel pump
   There is oil pressure
```

### Diesel pump, oil pressure found

[N30]

When irrigation starts, the unit attempts to activate the diesel pump and it finds there already is oil pressure, which in theory means that the pump is running. In this case an anomaly is recorded and irrigation and pump control continues without making any more start-up attempts.

```
                 ANOMALY

   N31  dd/mm/yy hh:mm
   Diesel pump
   Does not start.
```

### Diesel Pump, does not start

[N31]

Once the four start-up attempts have been made and 30 seconds have passed, if the pump is not operating, the programs under way that contain the sectors related to pump 1 will be terminated.

```
                 ANOMALY

   N32  dd/mm/yy hh:mm
   Diesel pump
   Oil pressure error
```

### Diesel pump, oil pressure error

[N32]

When a loss of pressure in the cylinder head is detected when the pump is operating, a record of the anomaly is made and the sectors being irrigated related to pump 1 are stopped.

## CONSULTATION

In the general query, the last line on the first screen shows the status of the diesel pump or the generator.

```
             GENERAL CONSULTATION

   Mon  01/01/05  10:12:35
   New anomalies: 05
   S: 01 02
   M:12  F:-2-4
   Diesel: stopped
```

```
   Diesel: stopped
   Diesel: preheating 008"
   Diesel: start 1
   Diesel: wait 12"
   Diesel: entering pump 036"
   Diesel: activated
   Diesel: pump coming out 105"
   Diesel: stopping 045"
   Diesel: in malfunction
```

# 8  TROUBLESHOOTING

These are the most common problems and we attempt to provide the solution to facilitate learning.



See frequently asked questions

### The irrigation program does not start

Go to 'Consult - 2. Programs', if an ' a ' or ' d ' appears next to the program, it indicates that there is something preventing irrigation. 'Enter' inside the program to see what it is.

For further information, see the Program query section.

### The Agrónic time is not correct

To change the time of the Agrónic, go to 'Function - 2. Manual - 5. Clock'.

# 9  TECHNICAL SUPPORT

Apart from this manual, the Agrónic 2500 has other manuals, instruction videos, tips and frequently asked questions on the Progrés website, Technical Support section.
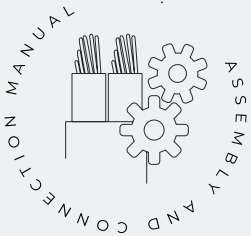
## Assembly and connection manual  *r2465*

Intended for those who physically install the Agrónic on the farm or in the electrical panel. Shows the dimensions and how the different connection options must be wired.
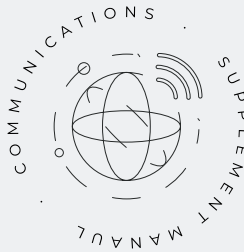
## Communications manual  *r1850*

Intended for installers who configure communications with the cloud for VEGGA and Agrónic APP or with the Agrónic PC Windows program. There is the explanation of the different communication systems.
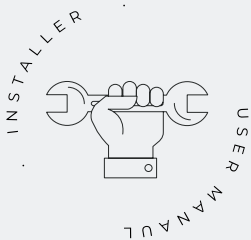
## Installer's manual

*r2466  r2468*

Intended for installers who configure the Agrónic irrigation system. It details all the parameters related to irrigation: general, sectors, programs, fertilization, etc.

There is one manual for the BASIC version and another for the Plus version.
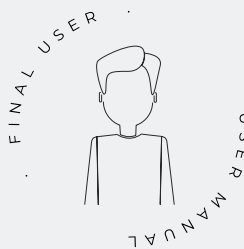
## End user manual

*r2467  r2469*

Intended for the Agrónic end user. It details the most common use of programming, manual actions and queries. The parameters are not explained in this manual.

There is one manual for the BASIC version and another for the Plus version.

## Pivot manual

*r2485*

For the installer and end user who uses the unit for pivot control.

## Solar irrigation manual  *r2006*

Intended for the installer and user who uses hybrid solar irrigation systems (panels + generator set).

## Installing the options

Installation Option GPRS

Installation Option USB  (r1933)

Installation Option WiFi

Installation Option AgroBee

Installation Option AgroBee-L (r2367)

Installation Option 2 analog inputs (r2366)

Installation Option SDI-12 and 4 in. Ana. (r2369)

Installation Option 5 digital inputs (r2370)

Installation Power limiting resistor

## Video tutorials

There are instruction videos on the Progrés website explaining the most frequently asked questions step-by-step. Please consult them if you have any questions or problems, you may find the solution there.

# 10 CONSULTATION SCREENS

CON

**CONSULTATION**

1 GENERAL
2 PROGRAMS
3 SECTORS
4 FERTILIZERS
5 FILTERS

6 DETERMINING FACTORS
7 SENSORS
8 COMMUNICATION
9 AGRÓNIC
10 PIVOT

CON

ENTER

**2** or ▼ — ENTER

**3** or ▼ — ENTER

**4** or ▼ — ENTER

**GENERAL CONSULTATION**

Mon 31/10/13 16:45:05
New anomalies: 02
No irrigation under way

CR1      PC

**PROGRAM CONSULTATION**

01.  02  03   04.   05.
06R 07.  08.  09a  10.
11.  12.  13.  14.   15.
16.  17.  18.  19.   20.
Program No. 06

**SECTOR CONSULTATION**

01.  02R 03R 04.   05.
06.  07.  08.  09.   10.
11.  12.  13.  14.   15.
16.  17.  18.  19.   20.
Sector No. 03

**FERTILIZERS CONSULTATION**

F1: 00118 L    M1: 000”
F2: 00073 L    M2: 024” Mar.
F3: 00109 L
F4: 00043 L    M4: 000”

Cleaning: 020”

**6** ENTER

**3** ENTER

**CON. P06**

Irrigating
Sectors: 02 03
Irrigation:  0083.5 m3
Fert. 1:  00118 L

**CON. S03**

Active
Program: 06
Irrigation:  0083.5 m3

**7** or ▼ — ENTER

➕

➕

**8** or ▼

| DIGITAL | ANALOG. | METER |
|---|---|---|

D01 [0] IL
D02  ...
D03 [0]
...
D20  ...

| DIGITAL | ANALOG. | METER |
|---|---|---|

A01 52%  VIRTUAL
A02 Error
A03  ...
 ...
A40  ...

| DIGITAL | ANALOG. | METER |
|---|---|---|

C01 ...
C02 ...
C03 ...
...
C10  ...

"see specific communications manual"

**5** or ▼

ENTER

### FILTER CONSULTATION

Cleaning stopped
Units between cleanings:
time: 00063 '
Volume: 00583 m3

**6** or ▼

ENTER

### DET. FACTOR CONSULTATION

01. 02. 03. 04. 05.
06. 07. 08. 09. 10.
11. 12. 13. 14. 15.
16. 17. 18. 19. 20.
Determining factor No.: 01

**1**

ENTER

CON. C01 Emergency stop

Not active. [0]
Type: definitive stop
Sensor: d02
Delay: 000"

**9** or ▼

ENTER

### AGRÓNIC CONSULTATION

NS: 00001 V: 3.00  Relay
V. Out.: yes
Vdc: 11.8 v

**10** or ▼

ENTER

### PIVOT 1

Stopped

# 11   FUNCTION SCREENS

**FUN**

**FUNCTION**

1. PROGRAMS
2. MANUAL
3. READINGS
4. PARAMETERS
5. PIVOTS

**ENTER**

**PROGRAMS**

P01 – S03  S04
P02 – S05
P03 –
P04 – S02  S01
P06 – S07  S08

P07 –
P08 –
 - - - - -
P50 –

**ENTER**

**PROGRAM 02**

Sectors: 05
SMTWTFS Start: 06:15
Irrigation: 00266 m3
F1  00045L  F2  00105L

**2** or ▼

**ENTER**

**MANUAL**

1 Out of service
2 STOP
3 Programs
4 Filters
5 Timer

6 Terminate stops
7 Determining factors
8 Sectors
9 Sensors
10 Erase totals
11 Outputs
12 Pivot

**3** or ▼

**ENTER**

**READINGS**

1 Totals
2 Anomalies
3 Record
4 History

**4** or ▼

**ENTER**

**PARAMETERS**

1  Fertilization
2 Filters
3 General
4 Programs
5 sectors

6 Communications
7 Determining factors
8 Sensors
9 Various
10 Installer
11 Solar irrigation
12 Pivot

**FUN**

**5** or ▼

**ENTER**

**CONSULTATION PIVOTS**

Pivot 1
Pivot 2
Pivot 3
Pivot 4

# SPACE RESERVED FOR THE USER

Use this space to record information such as the parameters entered into the controller, drawings, program information, determining factors, alarms, etc.

## Warranty

The Agrónic 2500 complies with the CE marking directives.
Products manufactured by Progrés have a two-year warranty
against any manufacturing defect.
Compensation for direct and indirect damage caused by the use
of the unit is excluded from the guarantee.